

What is claimed is:

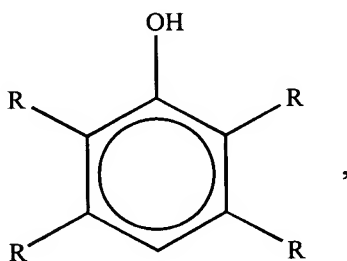
1. A method for preparing a brominated hydroxyaromatic compound which comprises contacting a hydroxyaromatic compound with oxygen and a bromine compound selected from the group consisting of hydrogen bromide, elemental bromine, ionic bromide salts, and mixtures thereof, in an acidic medium, in the presence of a catalyst selected from the group of compounds and mixtures of compounds of Group IV-VIII transition metals of the Periodic Table of Elements.
2. The method of claim 1, wherein said Group IV-VIII transition metals are selected from the group consisting of vanadium, titanium, molybdenum, tungsten, and iron.
3. The method of claim 1, wherein said catalyst is selected from the group consisting of sodium metavanadate, bis(acetylacetonate)oxovanadium, bis(acetylacetonate)oxotitanium, sodium molybdenum oxide dihydrate, iron bromide ( $\text{FeBr}_2$ ), tungstic acid ( $\text{H}_2\text{WO}_4 \cdot x\text{H}_2\text{O}$ ), and mixtures thereof.
4. The method of claim 1, wherein said catalyst comprises a compound of vanadium in the form of a neutral complex, cationic salt, or anionic salt.
5. The method of claim 1, wherein said catalyst comprises a mixture of a compound of vanadium and a compound of molybdenum or tungsten.
6. The method of claim 5, wherein a molar ratio of said compound of vanadium to said compound of molybdenum or tungsten ranging from about 1:0.5 to about 1:6 is employed.
7. The method of claim 1, wherein a nitrate salt is added to said catalyst.
8. The method of claim 7, wherein said nitrate salt is sodium nitrate.
9. The method of claim 7, wherein said catalyst is a compound of vanadium.

10. The method of claim 7, wherein a molar ratio of said nitrate salt to said catalyst ranging from about 1:1 to about 1:4 is employed.

11. The method of claim 1, wherein said medium is anhydrous.

12. The method of claim 11, wherein said bromine compound is anhydrous hydrogen bromide or an anhydrous ionic bromide salt, and wherein water is also present, and wherein a molar ratio of water to anhydrous hydrogen bromide or anhydrous ionic bromide salt ranging from about 0.1:1 to about 2:1 is employed.

13. The method of claim 1 wherein the hydroxyaromatic compound has the formula



wherein each R is independently hydrogen or C<sub>1-4</sub> alkyl.

14. The method of claim 1, wherein said hydroxyaromatic compound is phenol, o-cresol, or m-cresol.

15. The method of claim 1, wherein the bromine compound is hydrogen bromide.

16. The method of claim 1, wherein the bromine compound is elemental bromine having formula Br<sub>2</sub>.

17. The method of claim 1, wherein said oxygen is provided by air.

18. The method of claim 1, wherein oxygen under pressure is employed.

19. The method of claim 1, wherein flowing oxygen is employed.

20. The method of claim 1, wherein a polar organic solvent is also present.

21. The method of claim 20, wherein the solvent is acetonitrile, dimethyl sulfoxide, chloroform, o-dichlorobenzene, ethyl acetate, water, phenol, o-cresol, m-cresol, propionic acid or acetic acid.

22. The method of claim 20, wherein the solvent is acetic acid.

23. The method of claim 1, wherein a temperature in the range of about 20-150°C is employed.

24. The method of claim 1, wherein said bromine compound is an ionic bromide salt and wherein a molar ratio of said ionic bromide salt to said hydroxyaromatic compound less than 1:1 is employed.

25. The method of claim 1, wherein said bromine compound is elemental bromine and wherein a molar ratio of said elemental bromine to said hydroxyaromatic compound less than 1:2 is employed.

26. The method of claim 1, wherein a molar ratio of said hydroxyaromatic compound to said catalyst ranging from about 1:1 to about 500:1 is employed.

27. A method for preparing 4-bromophenol, 4-bromo-o-cresol or 4-bromo-m-cresol, which comprises contacting phenol, o-cresol or m-cresol, respectively, with air and hydrogen bromide in an acidic medium, in the presence of a catalyst selected from the group of compounds and mixtures of compounds of Group IV-VIII transition metals of the Periodic Table of Elements.